

Appl. No.: 10/823,331

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The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. – 10. (Canceled)

11. (previously presented) A method for manufacturing an organic light emitting diode device, said method comprising the steps of:

providing a first glass plate;

providing a second glass plate;

positioning a frit made from glass doped with at least one transition metal and a coefficient of thermal expansion (CTE) lowering filler between said first and second glass plates, said filler comprising no more than about 30% of said frit and wherein a mean particle size of said frit is less than or equal to about 20 μm ;

positioning an organic light emitting diode between said first and second glass plates; and

heating said frit with a laser in a manner that would cause said frit to soften and form a hermetic seal between said first and second glass plates, thereby hermetically sealing said organic light emitting diode between said first and second glass plates.

12. (Original) The method of Claim 11, further comprising the step of placing an adhesive within a gap located between outer edges of said first and second glass plates, wherein said gap is caused by the presence of the hermetic seal.

13. – 17. (Canceled)

18. (previously presented) The method of Claim 11, wherein a T_g of said frit is less than about 350°C.

19. – 20. (Canceled)

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21. (previously presented) The method of Claim 11, wherein said CTE lowering filler is an additive filler including lithium alumino-silicate compounds.

22. (previously presented) The method of Claim 11, wherein said comprises vanadium or neodymium.

23. (previously presented) The method of Claim 11, wherein said frit excluding said CTE lowering filler has the following composition:

K₂O (0-10 mole %)
Fe₂O₃ (0-20 mole %)
Sb₂O₃ (0-40 mole %)
P₂O₅ (20-40 mole %)
V₂O₅ (30-60 mole %)
TiO₂ (0-20 mole %)
Al₂O₃ (0-5 mole %)
B₂O₃ (0-5 mole %)
WO₃ (0-5 mole %)
Bi₂O₃ (0-5 mole %).

24. (previously presented) The method of Claim 11, wherein said frit excluding said CTE lowering filler has the following composition:

K₂O (0-10 mole %)
Fe₂O₃ (0-20 mole %)
Sb₂O₃ (0-20 mole %)
ZnO (0-20 mole %)
P₂O₅ (20-40 mole %)
V₂O₅ (30-60 mole %)
TiO₂ (0-20 mole %)
Al₂O₃ (0-5 mole %)
B₂O₃ (0-5 mole %)
WO₃ (0-5 mole %)

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Bi_2O_3 (0-5 mole %).

25. (currently amended) The method of Claim 11, wherein said frit is selected from the group of glasses consisting of a titano-vanadium-phosphate glass, ~~[[an]] a vanadate-iron-phosphate vanadium glass~~, a zinc-vanadium-phosphate glass, a Sn-Zn-phosphate glass, a mixed alkali zinc-phosphate glass, a vanadium-phosphate glass, a Pb-borate glass, and a mixed alkali zinc-phosphate glass with vanadium and lead.

26. – 36. Canceled

37. (previously presented) A method for manufacturing an organic light emitting diode device, said method comprising the steps of:

providing a first substrate plate;

providing a second substrate plate;

positioning a frit made from a lead-free glass comprising vanadium and a coefficient of thermal expansion (CTE) lowering filler between said first and second substrate plates, said frit having a T_g less than about 350°C; and

positioning an organic light emitting diode between said first and second substrate plates; and

heating said frit with a laser in a manner that would cause said frit to melt and bond to said first and second substrate plates, thereby forming a hermetic seal between said first and second substrate plates, and wherein a temperature of said organic light emitting diode does not exceed about 100°C during said heating.

38. – 46. (Canceled)

47. (Previously Presented) The method of Claim 37, wherein said CTE lowering filler is an inversion filler or an additive filler.

48. – 67. Canceled

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68. (previously presented) The method according to claim 11, wherein a mean particle size of said frit is between about 15 μm and 20 μm .

69. (previously presented) The method of claim 11, wherein a mean particle size of said frit is between about 5 μm and about 10 μm .

70. (previously presented) The method of claim 11, wherein said frit was deposited by screen printing.

71. (previously presented) The method of claim 11, wherein a maximum temperature of said organic light emitting diode during said heating is less than about 100°C.

72. (previously presented) The method of claim 11 wherein a maximum temperature of said organic light emitting diode during said heating is less than about 80°C.

73. (previously presented) The method of claim 11 wherein said frit is lead free.

74. (previously presented) The method of claim 11 wherein said filler comprises between about 20% and about 30% of said frit.

75. (Canceled)

76. (previously presented) The method of claim 37 wherein a thickness variation of said frit prior to said heating is less than about 10 μm .

77. (previously presented) The method of claim 37 wherein a thickness variation of said frit prior to said heating is less than about 5 μm .

78. (previously presented) The method of claim 37 wherein a mean particle size of said frit is less than or equal to about 20 μm .

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79. (previously presented) The method of claim 37 wherein a mean particle size of said frit is between about 15 μm and about 20 μm .

80. (previously presented) The method of claim 37 wherein a mean particle size of said frit is between about 5 μm and 10 μm .

81. (previously presented) A method for manufacturing a hermetically sealed glass package, said method comprising the steps of:

providing a first glass plate;

providing a second glass plate;

positioning a frit made from glass doped with at least one transition metal and a coefficient of thermal expansion (CTE) lowering filler between said first glass plate and said second glass plate, said filler comprising no more than about 30% of said frit and wherein a mean particle size of said frit is less than or equal to about 20 μm ;

positioning a temperature sensitive material between said first and second glass plates; and

heating said frit with a laser in a manner that would cause said frit to soften and form a hermetic seal between said first and second glass plates, thereby hermetically sealing said temperature sensitive material between said first and second glass plates and wherein a temperature of said temperature sensitive material does not exceed about 100°C during said heating.

82. (previously presented) The method of claim 81 wherein said temperature sensitive material is an organic material.